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10/583,381	06/18/2007	Timo Varpula	43289-232639	3135

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EXAMINER	
BALDRIDGE, BENJAMIN M	
ART UNIT	PAPER NUMBER
2831	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/583,381	VARPULA ET AL.	
	Examiner	Art Unit	
	Benjamin M. Baldridge	2831	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 November 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 - 43* is/are pending in the application.

4a) Of the above claim(s) *1 - 22, 26, 29, 34 - 43* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *23 - 25, 27 - 28, 30 - 31* is/are rejected.

7)☒ Claim(s) *32 - 33* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 June 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Amendment A, received 10 November 2008, is acknowledged and entered into the record. Claims 1 – 22, 26, 29, 34 - 43 are cancelled; amended claims 23 - 25, 27 - 28, 30 - 33 are presented for examination.

Specification

2. Objections to the specification for informalities made in a previous office action have been remedied by the amendment to the specification included in Amendment A. Objections to the specification for informalities are withdrawn.

3. Objection to the specification for lacking the required format and section headings, made in a previous office action, have been remedied by the amendment to the specification included in Amendment A. Objection to the specification for lack of required format and section headings is withdrawn.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 23 – 25, 30 - 31 are rejected under 35 U.S.C. 102(e) as being anticipated by Smolander et al. (US Patent Application Publication Pub. No. US 2007/0176773, Pub. Date August 2, 2007, hereinafter referred to as Smolander).

The applied reference has common inventors with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the

reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

As to claim 23, Smolander discloses an RFID food spoilage sensor for packaged food and drugs including:

A sensor arrangement remotely readable by radio frequencies for determining desired quantities from sources ([0037], lines 1 – 5; note also title of Smolander publication);

An LC resonator which comprises a capacitor and a coil (Figure 3, items 24, 5, 21; note that resonator is used to interrogate the sensor; note also explicit disclosure of LC resonant circuit in [0038], line 5);

A sensor element coupled to the LC resonator, whose properties change as a function of a measurable quantity (Figure 3, items 22, 12, 14, 13; note magnetic coupling M between items 13 of the sensor and item 5 of the LC resonator. Note also that the sensor element 12 is a resistance that changes in response to presence of decay products in a food or drug package, as disclosed in [0035], lines 6 - 11 of Smolander);

The sensor element being coupled capacitively or inductively with the LC resonator without forming a direct galvanic contact ([0035], lines 6 – 11; also Figure 3, items 22, 12, 14, 13; note magnetic coupling M between items 13 of the sensor and item 5 of the LC resonator).

Wherein the capacitor or the coil is configured to generate an electric or magnetic field on a location of the sensor, and wherein the sensor element directly affects the electric field or magnetic field generated by the capacitor or the coil ([0037], lines 1 - 4; [0038], lines 1 - 5; also Figure 3, item 12, 13, 14, 22; note explicit disclosure of an "antenna coil" in [0038]; note also discussion of swept RF signal from the reader device in [0038], and effects of swept RF signal on the sensor device in [0039])

As to claims 24 – 25, 30 – 31, Smolander discloses:

The sensor element is cumulatively variable [claim 24] (Figure 1, item 12; [0035], lines 11 – 19; [0039], lines 8 – 11);

The sensor arrangement is suitable for use in monitoring deterioration of foodstuffs and medicinal substances [claim 25] ([0020], lines 3 - 11; [0039], lines 5 - 11);

The sensor element inductively couples to the LC resonator [claim 30] ([0035], lines 6 – 11; also Figure 3, items 22, 12, 14, 13; note magnetic coupling M between

items 13 of the sensor and item 5 of the LC resonator; note also explicit disclosure of "antenna coil" in [0038]).

The sensor element is disposed in the middle of the coil [claim 30] (Figure 2a, items 13, 14; note that the resistive element is disposed in the middle of the planar spiral inductor, which is taken to be the coil recited in the instant claim);

The sensor element inductively couples to the LC resonator [claim 31] ([0035], lines 6 – 11; also Figure 3, items 22, 12, 14, 13; note magnetic coupling M between items 13 of the sensor and item 5 of the LC resonator; note also explicit disclosure of "antenna coil" in [0038]).

The sensor element is disposed alone inside the package [claim 31] ([0039], lines 5 – 11; the term "disposed alone inside the package" is taken to mean that no other sensor element (i.e. the resistive element shown as item 12 in Figure 3) is included in the package of foodstuff or medicinal substances).

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 27 – 28 are rejected under 35 U.S.C. 103(a) as being obvious over Smolander in view of Maloney (US Patent 6,204,764 B1, March 20, 2001, hereinafter referred to as Maloney).

The applied reference (Smolander) has common inventors with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37

CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

As to claims 27 - 28, Smolander discloses a device as stated above in paragraph 4.

The sensor element is adapted to couple capacitively to the LC circuit (Abstract, lines 12 – 15; Column 3, lines 64 – 67. Note that Maloney explicitly discloses use of a sensor using capacitive coupling. Note also that capacitive coupling is the electrostatic analogue of magnetic (inductive) coupling, and as such, its use would have been obvious to a person of ordinary skill in the art as an obvious modification of the apparatus disclosed by Smolander).

Given the teaching of Maloney, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the method of Smolander by employing well known or conventional features such as capacitively coupling to a sensor element, as disclosed by Maloney, in order to detect decay products or other indications of lessened quality in food products or medicinal substances.

As to claims 27 and 28, Smolander discloses:

The sensor element is disposed on top of the coil (Figure 2a, items 13, 14; note that the resistive element is disposed in the middle of the planar spiral inductor, which is taken to be the coil recited in the instant claim);

The capacitively couplable sensor element is disposed alone inside the package ([0039], lines 5 – 11; the term "disposed alone inside the package" is taken to mean that no other sensor element (i.e. the resistive element shown as item 12 in Figure 3) is included in the package of foodstuff or medicinal substances).

Smolander fails to disclose:

The sensor element capacitively couples to the LC resonator [claims 27, 28].

Maloney discloses:

The sensor element capacitively couples to the LC resonator [claims 27, 28] (Abstract, lines 12 – 15; Column 3, lines 64 – 67. Note that Maloney explicitly discloses use of a sensor using capacitive coupling. Note also that capacitive coupling is the electrostatic analogue of magnetic (inductive) coupling, and as such, its use would have been obvious to a person of ordinary skill in the art as an obvious modification of the apparatus disclosed by Smolander. In addition, Smolander explicitly discloses "similar electronic techniques as those employed for reading…13.5 MHz RFID tags", clear motivation to combine the inductively coupled apparatus of Smolander with the RFID tags disclosed by Maloney).

Given the teaching of Maloney, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the method of Smolander by employing well known or conventional features such as capacitively coupling to a sensor element, as disclosed by Maloney, in order to detect decay products or other indications of lessened quality in food products or medicinal substances.

Allowable Subject Matter

6. Claim 32 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record fails to teach or suggest, singly or in combination, a sensor arrangement remotely readable by radio frequencies for determining desired quantities from sources, wherein

The inductively couplable sensor element is disposed inside an electrically conductive ring which is thicker than the sensor element

as in claim 32.

Response to Arguments

7. Applicant's arguments filed 10 November 2008 have been fully considered but they are not persuasive.

As to claim 23, Applicant argues in essence that Smolander does not disclose a sensor that is capacitively or inductively coupled with an LC resonator without forming a direct galvanic contact. However, the sensor disclosed in Smolander clearly discloses an inductively coupled sensor with an LC resonator in the interrogation circuitry, as shown in Figure 3 of Smolander. Item 24 contains an "antenna coil (5) of reader device 24 that forms a portion of the resonant LC circuit 21." Figure 3 further shows magnetic coupling (arrow between item 5 and item 13, denoted M) between the sensor and the reader device. This argument is not persuasive.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin M. Baldridge whose telephone number is 571 270 1476. The examiner can normally be reached on Monday through Friday 7:30AM to 5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on 571 272 2245. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Benjamin M Baldridge/
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